Judging the secret thoughts of all: functional neuroimaging, 'brain reading,' and the theological ethics of privacy

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Abstract

Of the many futuristic prospects offered by neuroscience, one of the more controversial is 'brain reading': the use of functional neuroimaging to gain information about subjects' mental states or thoughts. This technology has various possible applications, including 'neuromarketing' and lie detection. Would such applications violate subjects' privacy rights? Conversely, if God knows and judges all our secret thoughts, do Christians have any stake in defending a right to mental privacy? This article argues that God's knowledge of us is different not only in degree but in kind from the knowledge sought through brain reading. This view of divine knowledge supports a theological account of privacy, richer and broader in scope than standard accounts of privacy rights,

which can aid the ethical analysis of the use of brain reading technology for purposes such as marketing and lie detection.

Keywords

Brain reading, Dietrich Bonhoeffer (1906-1945), functional neuroimaging, lie detection, neuroethics, neuromarketing, privacy.

Introduction

Of the various futuristic prospects promised by current neuroscience, one of the more controversial – and to some, alarming – must surely be what is variously known as 'brain reading,' 'mind reading,' 'thought identification' or the 'decoding of mental states.' What is meant by this is the use of functional brain imaging techniques such as electroencephalography (EEG) or functional magnetic resonance imaging (fMRI) to gain knowledge of subjects' mental states or thoughts.

Opinions vary about the likely scope of brain reading. Even its enthusiasts admit that it is 'still in its infancy,'[1] and some argue that scientific and technical factors will seriously limit its scope for the foreseeable future.[2] However, some relatively modest practical applications are already being promoted, and even these raise significant ethical questions. Furthermore, over-confidence about the power and usefulness of a new technology such as this may itself have ethically troubling outcomes. For these reasons, critical ethical appraisal of brain reading is certainly worth attempting.

Brain reading has received some attention within the field of neuroethics, but little if any from theological ethicists. This article is an initial attempt to fill that gap. It begins with a brief account of functional neuroimaging and brain reading. Next, the ethical analysis of brain reading in the neuroethics literature is

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[1] John-Dylan Haynes, 'Brain Reading: Decoding Mental States from Brain Activity in Humans,' in Judy Illes and Barbara J. Sahakian (eds.), *The Oxford Handbook of Neuroethics* (Oxford: Oxford University Press, 2011), pp. 3-13 (p. 6).

[2] Emily R. Murphy and Henry T. Greely, 'What Will Be the Limits of Neuroscience-based Mindreading in the Law?' in Illes and Sahakian (eds.), *The Oxford Handbook of Neuroethics*, pp. 635-53.

surveyed, focusing on concerns about privacy raised by two particular applications, 'neuromarketing' and neuroscience-based lie detection. In subsequent sections, a theological analysis of the ethics of brain reading is developed. This again focuses on privacy, which seems to be called into question by a Christian theological perspective. Drawing on the work of Dietrich Bonhoeffer, Rachel Muers and others, I argue that privacy remains a central concern for a Christian ethics of brain reading, but it must be reframed in light of core theological themes and perspectives. A theologically reframed account of privacy can inform the ethical analysis of brain reading, including neuromarketing and neuroscience-based lie detection.

The science of brain reading

According to John-Dylan Haynes, brain reading 'requires that every mental state ("thought") is associated with a characteristic pattern of brain activity.'[3] Working on this assumption, researchers first attempt to identify that pattern of activity using functional imaging techniques such as EEG or fMRI. Then, if the same pattern is detected on another occasion, they infer that the subject is having the same thought.

It is important to appreciate the challenges, limitations and pitfalls of this kind of approach. Some of these have to do with the various imaging techniques themselves, which have different kinds of technical limitations. They are also difficult to use, fMRI especially so.[4] The relationship between brain activity and the signal detected in the MRI scanner is indirect and complex. The raw data from the scanner require a good deal of sophisticated statistical processing, during which it is surprisingly easy for errors and artefacts to be introduced.

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[3] Haynes, 'Brain Reading,' p. 4.

[4] Nikos K. Logothetis, 'What We Can Do and What We Cannot Do with fMRI,' *Nature* 453 (2008), pp. 869-78, DOI: 10.1038/nature06976.

With any technique, it can be difficult to be sure that the brain activity detected is associated with the mental states or thoughts one is interested in. Results obtained in the rather alien environment of the laboratory may not be valid in the outside world – the problem known as 'ecological validity.' Moreover, the conceptualisation and design of many brain imaging studies involves non-trivial psychological, philosophical and (at least implicitly) theological assumptions. Flawed or questionable assumptions may shape or distort the study design and therefore the results and conclusions. Indeed, the basic working assumption of brain reading stated by Haynes, quoted above, already implies at least one quite significant claim, which will be revisited later.

In addition to these general limitations, brain reading is subject to some more specific challenges. One is that the vast complexity of the human brain severely limits what might be achieved for the foreseeable future. A 'universal mind reading machine,'[5] which could map and decode the complete state of the brain at any instant, is, as Emily Murphy and Henry Greely put it, 'far beyond unapproachable.'[6] Researchers therefore focus on much more modest and specific goals. Another challenge is that individuals' brains are different and change over time, so it is not guaranteed that a mental state will be correlated with the same brain activity pattern in different people, or even in the same people at different stages of their lives.[7]

Despite these limitations and challenges, brain reading researchers claim some successes. For example, Haynes and his colleagues have reported that they could predict subjects' intentions from their patterns of brain activity before those intentions were acted upon, and to some extent even before the subjects were

[5] Haynes, 'Brain Reading,' p. 6.

[6] Murphy and Greely, 'What Will Be the Limits of Neuroscience-Based Mindreading?' p. 638.

[7] Ibid., pp. 639-41.

conscious of having made up their minds.[8] Others have claimed to distinguish between different kinds of images (for example, faces and places) that subjects were viewing or imagining.[9]

Brain reading has diverse applications. For example, it can be used in *brain-computer interfaces*, which enable subjects to control devices by generating particular patterns of brain activity.[10] It has also been used to *detect conscious awareness* in patients diagnosed with disorders of consciousness such as vegetative or minimally conscious states.[11] Applications like these raise a wide

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[8] John-Dylan Haynes et al., 'Reading Hidden Intentions in the Human Brain,' *Current Biology* 17 (2007), pp. 323-28; Chun Siong Soon et al., 'Unconscious Determinants of Free Decisions in the Human Brain,' *Nature Neuroscience* 11 (2008), pp. 543-45. This work builds on the well-known, but controversial, studies of Benjamin Libet in the 1980s: see Benjamin Libet, 'Do We Have Free Will?' *Journal of Consciousness Studies* 6 (1999), pp. 47–57, and Benjamin Libet, 'The Timing of Mental Events: Libet's Experimental Findings and Their Implications,' *Journal of Consciousness Studies* 11 (2002), pp. 291-99, DOI: 10.1006/ccog.2002.0568. For an extensive and valuable collection of recent essays on the issues raised by Libet's work, see Walter Sinnott-Armstrong and Lynn Nadel (eds.), *Conscious Will and Responsibility: A Tribute to Benjamin Libet* (Oxford: Oxford University Press, 2010). Some theological and ethical implications of this work are explored in Neil Messer, *Theological Neuroethics: Christian Ethics Meets the Science of the Human Brain* (London: Bloomsbury T & T Clark, 2017), pp. 71-104.

[9] Murphy and Greely, 'What Will Be the Limits of Neuroscience-Based Mindreading?' p. 636.

[10] Nuffield Council on Bioethics, *Novel Neurotechnologies: Intervening in the Brain* (London: Nuffield Council on Bioethics, 2013), pp. 28-35.

[11] Adrian M. Owen, 'When Thoughts Become Actions: Neuroimaging in Non-responsive Patients,' in Sarah Richmond, Geraint Rees and Sarah J. L. Edwards

range of ethical issues, which are beyond the scope of a single paper to discuss in depth.[12] This article therefore focuses on two other applications, both of which in different ways raise ethical questions about privacy.

First is *neuromarketing*, which refers to the use of neuroscience in various ways to understand and influence consumers' purchasing behaviour.[13] Neuroscientific studies have provided new insights into the importance of non-conscious emotional or affective processes in guiding consumers' decisions. One neuromarketing approach, building on this research, would use brain imaging to study volunteers' affective responses to various marketing stimuli. The information gained would be used to design modified marketing approaches that were more effective in targeting consumers' affective responses and influencing them to purchase products.[14] In a more ambitious approach – unlikely to be feasible with current technology – individual consumers entering a marketplace would be subjected to brain imaging. Information about their cognitive and affective responses would then be used to target personalised marketing to them

(eds.), *I Know What You're Thinking: Brain Imaging and Mental Privacy* (Oxford: Oxford University Press, 2012), pp. 73-87.

[12] For a theological and ethical analysis of the detection of covert awareness in disorders of consciousness, see Messer, *Theological Neuroethics*, pp. 105-42.

[13] By the early 2010s it was estimated that there were already over 300 commercial organisations active in this area: Yesim Isil Ulman, Tuna Cakar and Gokcen Yildiz, 'Ethical Issues in Neuromarketing: "I Consume, Therefore I am!"' *Science and Engineering Ethics* 21 (2015), pp. 1271-84, DOI: 10.1007/s11948-014-9581-5 (p. 1272).

[14] R. Mark Wilson, Jeannie Gaines, and Ronald Paul Hill, 'Neuromarketing and Consumer Free Will,' *Journal of Consumer Affairs* 42.3 (2008), pp. 389-410 (pp. 397-98).

in order to influence their individual purchasing behaviour.[15] Whether this personalised approach will ever be technically possible is far from clear.

The second application is *lie detection,* to which there are two basic approaches.[16] One, the so-called 'control question' approach, is to try and identify the different patterns of brain activity correlated with making true and false statements. Then, if subjects are asked questions of interest and a pattern of brain activity associated with deception is detected, the inference is that they are lying. The other approach uses the 'guilty knowledge test.' Criminal suspects, for example, might be asked questions to which only someone present at the crime scene would know the answers, or shown images that only someone present at the scene would recognise. If their brain activity patterns suggest they know the information or recognise the images, it is inferred that they were present when the crime was committed. Brain reading for lie detection has obvious interest for the police, the criminal justice system and the security services, but has also been promoted as a way to detect deception in business, employment and even personal relationships.[17]

Researchers have claimed some success with both approaches, but in addition to the general challenges outlined earlier, lie detection raises more specific concerns. One is that different researchers' findings are partly but not fully

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[15] Ibid., pp. 398-99.

[16] Paul Root Wolpe et al., 'Emerging Neurotechnologies for Lie-Detection: Promises and Perils,' *American Journal of Bioethics* 5.2 (2005), pp. 39-49, DOI: 10.1080/15265160590923367 (pp. 40-41).

[17] Robert L. Mitchell, 'Sex, Lies, and MRIs,' online at https://www.computerworld.com/article/2538636/sex--lies-and-mris.html (accessed 22 October 2019).

consistent with each other.[18] A second is the problem of ecological validity, raised earlier: this arises particularly sharply with neuroscience-based lie detection, since most laboratory studies have used simple, artificial tasks with far less emotional salience than the real-world situations that the techniques would be used to investigate. Thirdly, it has been suggested that it might be possible to train oneself to fool these tests, though this is a matter of dispute. Finally, there are indications that in real-world situations, current approaches would have a high rate of false positives (incorrectly identifying people as lying) which would of course be particularly dangerous in criminal justice or security contexts.[19] For these reasons, most researchers agree that it is too early to use these techniques in the real world, though this has not stopped various for-profit companies offering neuroscience-based lie detection services.[20] To date, neuroscience-based lie detection has played only a limited role in the US courts and apparently none in England and Wales, though in India it played a controversial role in a murder conviction (subsequently overturned) in 2008.[21]

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[18] Martha J. Farah et al., 'Functional MRI-based Lie Detection: Scientific and Societal Challenges,' *Nature Reviews Neuroscience* 15 (2014), pp. 123-31, DOI:10.1038/nrn3665

[19] Ibid., p. 126.

[20] For example, https://www.larryfarwell.com/brain-fingerprinting-laboratories-inc.html (accessed 22 October 2019).

[21] Paul Catley and Lisa Claydon, 'The use of neuroscientific evidence in the courtroom by those accused of criminal offenses in England and Wales,' *Journal of Law and the Biosciences* 2.3 (2015), pp. 510-49, DOI: 10.1093/jlb/lsv025 (p. 513); Francis X. Shen et al., 'The limited effect of electroencephalography memory recognition evidence on assessments of defendant credibility,' *Journal of Law and the Biosciences* 4.2 (2017), pp. 330-64, DOI: 10.1093/jlb/lsx005; Lisa Claydon and Paul Catley, 'If a Brain is Caught Lying, Should We Admit That Evidence to Court? Here's What Legal Experts Think,'

Ethical issues raised by brain reading

Several commentators, including Neil Levy, suggest that the most immediate ethical concern about brain reading is over-confidence about what the technology can achieve, resulting in premature use. As Levy puts it, '[t]he aura of prestige and objectivity which surrounds science generally is perhaps even stronger in relation to the science of the mind at its cutting edge.'[22] There is a danger of great harm if the 'seductive allure' of neuroscientific findings leads courts and other public institutions to be over-impressed by confident claims made for brain reading, particularly by commercial organisations with an interest in promoting it.[23] However, there is some evidence to suggest that this concern is over-stated.[24]

Beyond over-confidence and premature use, one of the main concerns raised about neuromarketing and neuroscience-based lie detection is that in different ways, both threaten subjects' *privacy*. Indeed, brain reading is sometimes seen as a particularly acute threat to privacy, because our brains and minds are so closely connected to our personhood and sense of self.[25]

The Conversation, August 2, 2017, https://theconversation.com/if-a-brain-can-be-caught-lying-should-we-admit-that-evidence-to-court-heres-what-legal-experts-think-80263 (accessed 24 July 2019).

[22] Neil Levy, *Neuroethics: Challenges for the 21st Century* (Cambridge: Cambridge University Press, 2007), p. 144.

[23] Deena Skolnick Weisberg et al., 'The Seductive Allure of Neuroscience Explanations,' *Journal of Cognitive Neuroscience* 20.3 (2008), pp. 470-77, DOI: 10.1162/jocn.2008.20040.

[24] Shen et al., 'The limited effect of EEG memory recognition evidence.'

[25] Sarah E. Stoller and Paul Root Wolpe, 'Emerging Neurotechnologies for Lie Detection and the Fifth Amendment,' *American Journal of Law and Medicine* 33

What is meant by privacy in these debates, and why might it matter ethically? The concept of a right to privacy has been discussed and debated since the nineteenth century,[26] and space does not permit a survey of that whole discussion. However, Mark Tunick offers a representative recent account.[27] Like others, he identifies various aspects of privacy. Perhaps the most obvious in the present context is *informational* privacy, 'the ability to control who has access to information about oneself.'[28] In this perspective, information is sometimes thought of as a kind of property, and the right to privacy as a kind of property right, though it has often been pointed out that information does not behave like more familiar kinds of property, and there are significant differences between

(2007), pp. 359-75 (pp. 371-72); C. M Halliburton, 'How Privacy Killed *Katz*: A Tale of Cognitive Freedom and the Property of Personhood as Fourth Amendment Norm,' *Akron Law Review* 42 (2009), pp. 803-884 (p. 868), quoted by Roger Brownsword, 'Regulating Brain Imaging: Questions of Privacy, Informed Consent, and Human Dignity,' in Richmond et al. (eds.), *I Know What You're Thinking*, pp. 223-44 (p. 229).

[26] Discussions of privacy rights frequently take as their starting point Samuel D. Warren and Louis D. Brandeis, 'The Right to Privacy,' *Harvard Law Review* 4.5 (1890), pp. 193-220. Warren and Brandeis, citing Judge Thomas Cooley, define a privacy right as the right 'to be let alone' (ibid., p. 195).

[27] Mark Tunick, 'Privacy and Punishment,' *Social Theory and Practice* 39.4 (2013), pp. 643-68, DOI: 10.5840/soctheorpract201339436; Mark Tunick, 'Brain Privacy and the Case of Cannibal Cop,' *Res Publica* 23.2 (2017), pp. 179-96, DOI 10.1007/s11158-017-9352-7.

[28] Tunick, 'Brain Privacy and the Case of Cannibal Cop,' p. 187. See also Brownsword, 'Regulating Brain Imaging,' p. 226.

privacy and property rights.[29] A second aspect is *decisional* privacy, which in Tunick's words 'lets us set our own goals and act on them.'[30] Thirdly, there is what he calls *local* privacy, which 'lets us exclude others from our own spaces.'[31]

According to Tunick, a moral right to privacy can be based on individuals' interests in their *autonomy* and *dignity*. Autonomy is obviously related to decisional privacy, but Tunick also suggests various ways in which informational privacy also supports personal autonomy: for example by supporting identity formation, enabling us to choose how we present ourselves to others, supporting intimate relationships, and protecting us from manipulation.[32] As for dignity, Tunick argues that privacy protects us against the kinds of indignity that consist in 'being exposed or accessed by others without one's consent.'[33] We have a moral *right* to privacy, he argues, if these interests are not outweighed by legitimate competing interests of others.

In this framework, it is clear how neuromarketing could compromise individuals' autonomy, and lie detection could threaten both autonomy and dignity. Whether either practice thereby infringed a *right* to privacy would depend on the weight given to the competing interests in each case, such as companies' interests in selling more of their products, or society's interest in preventing or detecting a crime.

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[29] Brownsword, 'Regulating Brain Imaging,' pp. 227-28; Rachel Muers, *Keeping God's Silence: Towards a Theological Ethics of Communication* (Oxford: Blackwell, 2004), pp. 184-86.

[30] Tunick, 'Privacy and Punishment,', p. 650.

[31] Ibid.

[32] Ibid., pp. 650-55.

[33] Ibid., p. 654.

It might be objected that in all the scenarios outlined, privacy concerns can be allayed by consent. Current neuroimaging technology requires subjects' co-operation to obtain meaningful data, so in any currently feasible neuromarketing or lie-detection scenario, subjects would have consented to the brain reading procedures used. However, consent is not a panacea against concerns about privacy. Should neuroscience-based lie detection become accepted practice in employment or criminal investigation, for example, some people could find themselves required to undergo it on pain of various sanctions. Even if they co-operated, it may be asked how freely they would have consented. As for neuromarketing, in presently feasible scenarios, the targets of marketing interventions would not for the most part be the individuals who had agreed to provide their brain imaging data. And if, as Wilson et al. speculate, future imaging technologies ever allowed covert collection of imaging data from individuals, this would raise far greater concerns about privacy and consent.[34]

Aside from consent-based objections, some authors are sceptical on other grounds about these ethical concerns. Some of these objections, in effect, call into question Tunick's view that we have a strong interest in mental privacy. For example, using a thought experiment in which highly advanced technology would give the general public extensive access to one another's thoughts, Sarah Richmond concludes that concerns about mental privacy are over-stated.[35] Jesper Ryberg observes that humans have evolved a natural ability to 'read' one another's minds. He argues that it is difficult to show how neuroscience-based

[34] Wilson, Gaines, and Hill, 'Neuromarketing and Consumer Free Will,' pp. 401-404.

[35] Sarah Richmond, 'Brain Imaging and the Transparency Scenario,' in Richmond et al. (eds.), *I Know What You're Thinking*, pp. 185-203.

mind reading violates a right to mental privacy, if we regard this everyday natural 'mind reading' as morally unproblematic.[36]

The main aim of this paper, however, is not to contribute to these philosophical debates in their own terms, but to offer a theological response to them. That is the task to which I now turn.

The scanner and the eye of God

It does not take much imagination to hear, in descriptions of neuroscience-based brain reading, echoes of biblical texts depicting God's complete knowledge of human creatures. In the words of Psalm 139, the technology seems to allow its users to 'discern [our] thoughts from afar' (v. 2, NRSV). At present it is going too far to claim that 'before a word is on my tongue' a neuroscientist can 'know it *completely*' (v. 4, emphasis added), but researchers like Haynes claim significant progress in that direction.[37] The forensic uses of brain reading described earlier might suggest that human agents are now able to imitate God in not only knowing, but also 'judg[ing] the secret thoughts of all' (Romans 2:16).

If we believe that God sees all there is to see of us, discerning and judging even our most secret thoughts, how concerned should we be if new technologies allow humans, in limited ways, to imitate aspects of that divine knowledge? There are various reasons why the concerns about privacy outlined in the last section might seem to sit oddly within a Christian ethical frame of reference.

For a start, those privacy concerns are framed in terms of individual autonomy and rights, which seems to presuppose an anthropology rather distant from a theological understanding of ourselves as God's creatures, reconciled in Christ

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[36] Jesper Ryberg, 'Neuroscience, Mind Reading and Mental Privacy,' *Res Publica* 23.2 (2017), pp. 197-211, DOI: 10.1007/s11158-016-9343-0

[37] Haynes et al., 'Reading Hidden Intentions in the Human Brain.'

and heirs to the promise of redemption. The ultimate destiny of such reconciled and redeemed creatures does not seem to have much place for privacy, for keeping knowledge of ourselves back from one another.[38] According to Paul, at the eschaton we shall know fully and be fully known (1 Cor. 13:12). And although that is *then*, not *now*, we find penultimate echoes of this eschatological community, for example in the vignettes of the early church in the book of Acts, in which the believers 'were together and had all things in common' (Acts 2:44). This vision has been reflected at many times in Christian history by forms of Christian community whose members have practised disciplines of common life, openness and mutual accountability.[39]

In short, should Christians recognise the desire for privacy as alien to Christian life? And if so, can technologies such as brain reading be seen as potentially benign human imitations of divine knowledge, fitting for creatures made in the image of God?

Perhaps; but in the Christian tradition, knowledge is not always innocent or benign. In Dietrich Bonhoeffer's reading of the Genesis 3 'Fall' narrative, the quest for God-like knowledge lies at the heart of the humans' attempt to be *sicut deus*, 'like God'.[40] For Bonhoeffer, this attempt amounts to a refusal of our

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[38] Muers, *Keeping God's Silence*, pp. 187, 210.

[39] One well-known historical example can be found in the *Banden* of the eighteenth-century Moravians and their major influence on the band and class meetings of early Methodism: see Kevin M. Watson, *Pursuing Social Holiness: The Band Meeting in Wesley's Thought and Popular Methodist Practice* (Oxford: Oxford University Press, 2014).

[40] Dietrich Bonhoeffer, *Creation and Fall: A Theological Exposition of Genesis 1-3* (Dietrich Bonhoeffer Works, vol. 3, ed. Martin Rüter, Ilse Tödt and John W. De Gruchy, trans. Douglas Stephen Bax, Minneapolis, MN: Fortress, 1997), pp. 111-14.

proper status as creatures made in God's image (*imago dei*), and it is the original disaster that divides us and separates us from our 'origin' in God our Creator. So is the use of technology to gain knowledge of others' secret thoughts the kind of activity proper to the *imago dei*, or is it better understood as an attempt to be *sicut deus*? To answer that question, we need to enquire more deeply into the character of the knowledge sought in brain reading.

Psalm 139 and the Panopticon

This is of course not the first technology to invite comparisons with divine omniscience. According to David Lyon, Jeremy Bentham alluded to Psalm 139 in the design for his model prison, the Panopticon: 'Thou art about my path, and about my bed; and spiest out all my ways.'[41] In Bentham's design, the prison (or for that matter the hospital, school or factory) was configured so that an inspector was always able to see all the inmates, while remaining invisible to them. Thanks to Michel Foucault, the Panopticon has often been regarded as the paradigm of modern surveillance[42] – although in recent surveillance studies it is

[41] David Lyon, 'Surveillance and the Eye of God,' *Studies in Christian Ethics* 27.1 (2014), pp. 21-32, DOI: 10.1177/0953946813509334 (p. 26). The quotation is from v. 2 in the Book of Common Prayer Psalter (= v. 3 in NRSV).

[42] Michel Foucault, *Discipline and Punish: The Birth of the Prison* (trans. Alan Sheridan, London: Penguin, 1991), pp. 195-228.

often said to be an inadequate image[43] – and Bruce Arrigo regards brain reading as a further intensification of panoptic surveillance.[44]

Yet the relationship between the Panopticon and Psalm 139 turns out to be more complex than we might initially suspect. As Lyon remarks, in Bentham's account the 'secular omniscience' promised by the Panopticon functioned as a *substitute* for the eye of God.[45] To maintain social order it was no longer necessary for people to know that they were seen by God: the knowledge that they were (or could be) observed by the inspector would do just as well.

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[43] See Gilbert Caluya, 'The post-panoptic society? Reassessing Foucault in surveillance studies,' *Social Identities* 16.5 (2010), pp. 621-33, DOI: 10.1080/13504630.2010.509565; Eric Stoddart, *Theological Perspectives on a Surveillance Society: Watching and Being Watched* (Farnham: Ashgate, 2011), pp. 1-2, 16-25; Ivan Manokha, 'Surveillance, Panopticism, and Self-Discipline in the Digital Age,' *Surveillance and Society* 16.2 (2018), pp. 219-37. Critics of 'panopticism' as an image of contemporary surveillance do not always fully acknowledge how for Foucault, the Panopticon's significance is in large part that it encouraged the objects of surveillance to *internalise* the inspector's requirements and police themselves. It is thus a symbol of what he calls the disciplinary society, in which power assumes 'capillary forms of existence, … reaches into the very grain of individuals, touches their bodies, and inserts itself into their actions and attitudes, their discourse, learning processes, and everyday lives': Michel Foucault, *Power/Knowledge: Selected Interviews and Other Writings, 1972-1977* (ed. Colin Gordon, trans. Colin Gordon et al., New York: Pantheon, 1980), p. 39, quoted by Bruce A. Arrigo, 'Punishment, Freedom, and the Culture of Control: The Case of Brain Imaging and the Law,' *American Journal of Law and Medicine* 33 (2007), pp. 457-82 (p. 466).

[44] Arrigo, 'Punishment, Freedom, and the Culture of Control,' pp. 473-76.

[45] Lyon, 'Surveillance and the Eye of God,' p. 26.

In some recent discussions, this secularised notion of omniscience seems to have been projected back onto God. David Elliott and Eldon Soifer, for example, describe God's knowledge of us as 'total observation': language redolent of the Panopticon, depicting God as the ultimate Inspector. Elliott and Soifer argue that this does indeed infringe our privacy, but God has a 'defensible excuse and justification' for this infringement.[46] The excuse is that God, being omniscient, cannot help it.[47] The justification is threefold: first, God as Creator of all has the authority to engage in total observation, by analogy with the authority that parents have over their children; second, the exercise of God's perfect justice requires total observation; third, God's perfect goodness means that total observation promotes the objective good of human creatures.[48]

This way of speaking about privacy and divine omniscience could be described, paraphrasing Karl Barth, as speaking of divine knowledge by speaking of human knowledge in a loud voice.[49] But whether or not one agrees with Barth about the impossibility of conducting authentically Christian God-talk in this way, the

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[46] David Elliott and Eldon Soifer, 'Divine Omniscience, Privacy, and the State,' *International Journal for Philosophy of Religion* 82.3 (2017), pp. 251-71, DOI 10.1007/s11153-017-9612-7 (p. 252). This is a recent contribution to an ongoing discussion about divine omniscience and privacy in the philosophy of religion, which includes: Charles Taliaferro, 'Does God Violate your Right to Privacy?' *Theology* 92 (1989), pp. 190-96; Margaret Falls-Corbitt and F. Michael McLain, 'God and Privacy,' *Faith and Philosophy* 9.3 (1992), pp. 369-86; Scott A. Davison, 'Privacy and Control,' *Faith and Philosophy* 14.2 (1997), pp. 137-51.

[47] Ibid., pp. 255-56, *contra* Falls-Corbitt and McLain, 'God and Privacy,' who argue that God chooses to limit divine knowledge of us out of respect for our privacy.

[48] Elliott and Soifer, 'Divine Omniscience, Privacy, and the State,' pp. 262-65.

[49] Cf. Karl Barth, *The Word of God and the Word of Man* (trans. Douglas Horton Smith, New York: Harper, 1957), p. 196.

story does not end there. This secularised notion of omniscience, projected onto God, is then turned back onto human beings. Elliott and Soifer's justification for God's total observation supplies a set of criteria that could justify human agencies (including states) in infringing the privacy of others.[50] In short, in the two centuries or so from Bentham's *Panopticon Letters* to Elliott and Soifer's article, a biblical and theological understanding of God's complete knowledge of us has been secularised into a proposal for exercising certain kinds of social control, that secularised version has come to shape how divine omniscience is understood, and the resulting account of divine omniscience has furnished criteria to justify human practices of observation and privacy infringement.

Hearing knowledge

This curiously reciprocal relationship between conceptions of divine and human knowledge suggests that both are understood in essentially the same way, the way knowledge is also typically understood in neuroscientific, philosophical and legal discussions of brain reading. In this way of thinking, knowledge is information,[51] neutral in itself and independent in principle of any particular relationship, and, if obtained or surrendered, might be used for benign or malign purposes.

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[50] Elliott and Soifer, 'Divine Omniscience, Privacy, and the State,' pp. 265-67.

[51] In a concluding section on different accounts of privacy, Elliott and Soifer (pp. 267-70) do broaden the discussion beyond information. Alongside *informational* privacy they consider other aspects similar to what Tunick calls 'decisional' and 'local' privacy. However, their aim in that section is to show that their theory of 'just privacy infringement' is applicable to these various notions of privacy. This does not really contradict my point, that when they are discussing either divine or human knowledge of humans, what they have in mind is summarised by the univocal category of 'observation.'

A contrasting way to conceive of divine knowledge is suggested by Rachel Muers in dialogue with Dietrich Bonhoeffer.[52] In an essay fragment written during his imprisonment and interrogation, Bonhoeffer poses the question, 'What does it mean to tell the truth?'[53] He rejects the idea that one can tell the truth 'in all places and at all times and to every person in the same way,' describing this as 'a dead idolatrous image of the truth … Satan's truth.'[54] He argues instead that '"telling the truth" means different things depending on where one finds oneself.'[55] What counts as truthful depends on the context of concrete particular relationships; this is the case not only in relation to fellow-humans but also for truthfulness to God, since the God of whom we are speaking is 'the God who in Jesus Christ came into the world.'[56] While the way in which Bonhoeffer develops this argument is problematic in some respects,[57] the basic insight is valuable and important.

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[52] Muers, *Keeping God's Silence*, pp. 188-212. See also, in similar vein, Lyon, 'Surveillance and the Eye of God,' pp. 28-30.

[53] Dietrich Bonhoeffer, 'Fragment of an Essay: What Does it Mean to Tell the Truth?' in *Conspiracy and Imprisonment: 1940-1945* (Dietrich Bonhoeffer Works vol. 16, ed. Jørgen Glenthøj et al., trans. Lisa E. Dahill and Douglas W. Stott, Minneapolis, MN: Fortress, 2006), pp. 601-608.

[54] Ibid., p. 604.

[55] Ibid., p. 602.

[56] Ibid.

[57] For instance, in one of his examples, 'a teacher asks a child in front of the class whether … the child's father often comes home drunk. It is true, but the child denies it' (Ibid., p. 605). Bonhoeffer argues that this denial is more truthful than an affirmation would have been, because 'it expresses the truth that the family is an order sui generis where the teacher was not justified to intrude' (p. 606). In view of what we now know about the serious harms done to children in some families, this claim calls for some critical reappraisal, to say the least.

Building on Bonhoeffer's essay, Muers argues that what we understand by divine knowledge must also be re-thought theologically: God's knowledge of human creatures belongs in, and takes its character from, particular covenant relationships. Drawing on the Exodus narrative, in which Moses is told that God has *heard* the cries of the Israelites and *knows* their suffering (Exod. 3:7), Muers calls this 'hearing knowledge.'[58] This is not abstract, detached knowledge-as-information, which could equally be put to benign or malign purposes. Hearing knowledge is inseparable from divine compassion and God's promise to act on behalf of God's people. One could put the point slightly differently, echoing Barth, by saying that the God who knows us completely is the God who has determined, from all eternity, to be 'with and for' humanity in Jesus Christ.[59]

As Muers also emphasises, divine knowledge is inseparable from divine judgement.[60] This is also evident in some of the biblical texts already cited: for example, Paul tells the Romans that God will *judge* the secret thoughts of all (Rom. 2:16). The connection between knowledge and judgement made in this text might seem to bring us closer to the forensic knowledge sought through neuroscience-based lie detection, aiming to decode 'secret thoughts' that may be used to 'accuse or perhaps excuse' suspects or defendants (cf. Rom. 2:15). But once again, the meaning of the divine judgement associated with God's knowledge of us is not univocal with the human knowledge and judgement associated with the criminal justice system.[61] Paul writes that 'God, *through Jesus Christ*, will judge the secret thoughts of all.' The one through whom we are known and judged by God is, in Barth's phrase, the Judge judged in our

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[58] Muers, *Keeping God's Silence,* p. 198 *et passim*.

[59] Cf. Karl Barth, *Church Dogmatics*, vol. 4.1 (ed. G. W. Bromiley and T. F. Torrance, trans. G. W. Bromiley, Edinburgh: T & T Clark, 1956), p. 40.

[60] Muers, *Keeping God's Silence,* 195.

[61] Bonhoeffer makes a similar, indeed sharper, contrast: 'What Does it Mean to Tell the Truth?' pp. 604-05. Cf. Muers, *Keeping God's Silence*, pp. 201-04.

place.[62] God's knowledge and judgement of us cannot be thought about apart from the incarnation, cross and resurrection; divine judgement is always also divine grace, oriented to our salvation.

If God's knowledge of us has the character suggested by Muers' reading of Bonhoeffer, it would be a serious distortion to portray it as essentially knowledge-as-information. The latter is neutral, abstracted from any relationship with its object, and could equally well be put to benign or malign uses. Elliott and Soifer's portrayal of divine and human knowledge risks this distortion. Although they certainly wish to speak of God's knowledge in the context of God's love and care, they subsume everything from state surveillance through parental knowledge of children to divine knowledge under the blunt category of 'observation.' This leaves insufficient room for the insight, suggested by Muers' analysis, that God's knowledge of us may differ from the knowledge gathered (for example) by the Stasi in Communist East Germany *not only* in the uses to which it is put, but also in the character of the knowledge itself.

Knowledge-as-information undoubtedly has its place in many spheres of human life, including scientific research.[63] However, the analysis in this section, drawing on Muers and Bonhoeffer, has suggested that it is an inadequate way to conceive of God's knowledge of God's beloved creatures. Using scientific techniques to discover the secret thoughts of others may superficially appear to

[62] Barth, *Church Dogmatics*, vol. 4.1, p. 211.

[63] This of course includes the scientific knowledge of human bodies, brains and minds that underpins modern medicine. Clearly, for some purposes, knowledge-as-information concerning other human beings is valid, necessary and can be used for their good. Yet even in such contexts it is important to be aware of its limits: possessing this kind of knowledge is not the same as knowing the patient as a human person, or in theological perspective as a creature, reconciled sinner and heir of redemption.

be an exercise of God-like knowledge. But to the extent that the knowledge sought is essentially knowledge-as-information, it is better understood as a parody or counterfeit of divine knowledge: more an attempt to be *sicut deus* than a reflection of the *imago dei*.

Genesis 3 and the theological ethics of privacy

The development of brain reading technologies might encourage us to think that almost God-like knowledge of one another's secret thoughts is within our grasp. However, I have argued that it is a serious mistake to think of the knowledge-as-information made possible by brain reading as truly God-like. Moreover, if human creatures bear the image of God, then the ways in which we are called to know one another should presumably reflect something of the character of God's knowledge of us, rooted and grounded in God's covenant love. Knowledge-as-information is at best only a limited aspect, and at worst a distortion, of such knowledge. If this is so, then restraints on our knowledge of one another, particularly the gathering of information about one another, may be needed in a fallen world as a protection for both seekers and objects of that knowledge (and of course, many people are both seekers and objects, to varying extents and in different ways). Such restraints may protect seekers from the morally and spiritually dangerous conceit that the knowledge they seek is truly God-like, and objects of knowledge from forms of 'observation' that too easily lend themselves to coercive, manipulative or otherwise wrongful ends.

Can *privacy* serve as such a restraint? Eric Stoddart suggests not. In a theological account of surveillance, he argues that asserting a right to privacy, while not without value, is an insufficient response to contemporary realities. Among the limitations of privacy rights-talk, according to Stoddart, it is too individualistic to respond to the complex social nature of current surveillance practices, it is insufficiently sensitive to differentials of power, and it does not adapt well to rapidly-changing contexts and practices of surveillance. He also believes that

Muers' theological account, while an improvement on standard rights-based accounts, does not fully address their deficiencies.[64] To go beyond these accounts of privacy, he coins the term '(in)visibility' to refer to the complex 'dynamic of managing and negotiating our visibility in social spaces.'[65] He points to biblical resources that can inform this practice of 'managing and negotiating our visibility': for example, the life of Moses, by turns hidden and visible in various ways, gospel narratives in which Jesus makes himself both visible and invisible, and strategies of (in)visibility adopted by early Christian communities in their relationships with their surrounding societies.[66]

Stoddart is correct in drawing attention to the limitations of privacy rights-talk and the need to take fuller account of the complexities of power and social dynamics. His concept of (in)visibility may indeed be better suited to the complexities of contemporary surveillance, in which many members of society both watch and are watched in multifarious ways. Yet in the different context of brain reading, the discussion of issues such as neuromarketing and lie-detection has at its heart such questions as: How, why and with what limits might others legitimately try to gain access to our inward thoughts, feelings and desires? What level of control should we have over others' access to our thoughts and mental states? These are still questions about *privacy*, which suggests that a theologically-informed ethic and practice of privacy is still important in this field.

Its importance can be further elucidated by returning to Genesis 3. In the 'Fall' narrative the humans, having grasped the knowledge that makes them *sicut deus*, find their nakedness exposed and try to cover themselves with leaves. But God, pronouncing judgement upon them, makes 'garments of skins' to replace their

[64] Stoddart, *Theological Perspectives on a Surveillance Society*, pp. 131-45.

[65] Ibid., p. 145.

[66] Ibid., pp. 159-68.

covering of leaves (Gen. 3:21). Bonhoeffer reads the 'garments of skins' as a metaphor for what, at this stage in his theological career, he calls 'orders of preservation.'[67] God 'accompanies humankind on its way,' accepting the fallen world as it is and participating in, not breaking, the 'new laws' that now apply. Yet God also restrains those laws by imposing order on them, and so demonstrates their sinful and fallen character. The orders that God imposes on the fallen world are not, however, eternal. 'They are not orders of creation but orders of preservation,' whose purpose is to 'uphold and preserve us' until 'our life finds its end in – Christ.'

Bonhoeffer's account is not without its own dangers. His concept of 'orders of preservation,' and even the language of 'divine mandates,' which he substitutes for it in later writing, perhaps make it too easy to claim divine sanction for contingent and contextual features of human social life.[68] Perhaps this underlies the problems noted earlier with Bonhoeffer's late essay on truth-telling.[69] However, with that caveat, his reading of the 'garments of skins' can help us make theological sense of the place of privacy in a fallen world.

I noted earlier that privacy seems to have no ultimate significance in the light of Christian eschatological hope, and that there may be forms of human relationship

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[67] Bonhoeffer, *Creation and Fall*, pp. 139-40. All quotations in the present paragraph are from these pages.

[68] Bonhoeffer's rejection of the concept of 'orders of creation' was a response to its co-option by theologians sympathetic to National Socialism, and he abandoned the language of 'orders of preservation' when this too proved vulnerable to co-option: see *Creation and Fall*, p. 140 n. 3, and Dietrich Bonhoeffer, *Ethics* (Dietrich Bonhoeffer Works, vol. 6, ed. Ilse Tödt et al., trans. Reinhard Krauss, Charles C. West and Douglas W. Stott, Minneapolis, MN: Fortress, 2005), pp. 389-90.

[69] See above, n. 57; cf. Muers, *Keeping God's Silence*, pp. 192-93.

and community in the present age which witness to the openness to one another that is our eschatological destiny. In such communities or relationships, privacy could seem unimportant or irrelevant. But these are at best proleptic glimpses of God's promised good future in the midst of a present reality that typically has a very different character. Moreover, even well-intentioned attempts to create such forms of Christian community can be vulnerable to damaging abuses of power and status,[70] and openness and accountability may be taken advantage of by those exercising abusive forms of spiritual leadership.[71] In the world as we find it – and even in the church as we find it – unreserved transparency and openness to one another would be a dangerously utopian ideal. In our present reality, privacy can be seen as an aspect of the 'order' that (Bonhoeffer argues) God imposes on the world: it both draws attention to and restrains the fallenness of the world, preserving human creatures for that eschatological future in which we *can* know fully and be fully known (1 Cor. 13:12).

However, privacy *rights* as standardly framed may not be adequate to this task, for the reasons already outlined. Perhaps it is not pressing our metaphor from Genesis 3 too far to liken privacy rights-talk to the leaves with which the humans tried to cover themselves. What is needed instead is a theologically-informed ethic and practice of privacy that resembles the 'garments of skins': a more

[70] One relatively recent example is the Charismatic 'shepherding movement' of the 1970s and 1980s, which was criticised for authoritarian and controlling forms of pastoral practice; some of the movement's leaders subsequently acknowledged serious failings. See S. David Moore, *The Shepherding Movement: Controversy and Charismatic Ecclesiology* (London: T & T Clark, 2003).

[71] See, e.g., Karen Lebacqz and Joseph D. Driskill, *Ethics and Spiritual Care: A Guide for Pastors, Chaplains, and Spiritual Directors* (Nashville, TN: Abingdon, 2000), pp. 127-52; David J. Ward, 'The Lived Experience of Spiritual Abuse,' *Mental Health, Religion and Culture*, 14.9 (2011), pp. 899-915.

complete and durable protection against coercive, manipulative or abusive forms of knowledge-gathering.

Privacy and human flourishing

What might this theological ethic and practice of privacy look like? Recalling Bonhoeffer's and Muers' insight that truth-telling and knowledge must be understood in the context of particular relationships, we might begin to develop it by distinguishing between those forms of knowledge and self-disclosure appropriate to particular human relationships, and those that are inappropriate to the same relationships. One way to make this distinction might be to ask what forms of knowledge and self-disclosure will enable those relationships to be most conducive to the flourishing of those involved as human creatures.

By 'flourishing,' broadly speaking, I mean human creatures' becoming more fully the creatures we have been made and called to be: fulfilling more completely God's good purposes for us in creation, reconciliation and redemption.[72] So understood, flourishing is a teleological category. Since the importance of privacy, theologically speaking, lies in its contribution to human flourishing, and its meaning is understood in terms of that contribution, privacy too has a teleological character. In theological perspective, privacy matters, and we understand what it means, in terms of what it is *for*.

The discussion thus far has suggested various elements that would need to be part of such an understanding and practice of privacy. Insights from standard philosophical accounts need not be denied, even if they are insufficient on their

[72] The ultimate fulfilment of God's good purposes for us, of course, can only be brought about by God's work in Christ, but in the present world, all kinds of circumstances and human activities can make a difference to the 'penultimate' fulfilment of those purposes. On the ultimate and the penultimate, see Bonhoeffer, *Ethics*, pp. 146-70.

own. A theological account of privacy can concur that something like Tunick's 'informational,' 'decisional' and 'local' privacy are important aspects[73] – though theologians should be wary of justifying them, as he does, in terms of personal autonomy. Hayden Ramsay, under the influence of the 'new natural law' theory of Finnis, Boyle and Grisez, adds two further aspects, which he argues are at least as important: solitude and domestic privacy.[74] In light of Stoddart's critique, a theological account should also attend to the social dimensions of our self-disclosure and knowledge of one another. Moreover, it would be important to remain alert to the complex operations of power in relation to privacy, knowledge and self-disclosure. In the context of brain reading, this alertness would not be limited to the uses of coercive power by states or other actors, but should also include (among other things) the imbalances of power between different groups or sections of society,[75] and the 'disciplinary' effects on the moral subjectivity of those who were, or might be, the objects of brain reading.[76] All these elements would need to be set in the context of a broad theological understanding of human flourishing: what forms of interpersonal and social relationship would be conducive to our greater fulfilment as human creatures in relation to God, to our 'near and distant neighbours' and the other creatures with which we share this world, in our own embodied lives, and in our particular situations and vocations?[77] What practices of knowledge, self-disclosure,

[73] Tunick, 'Privacy and Punishment,' p. 650.

[74] Hayden Ramsay, 'Privacy, Privacies and Basic Needs,' *Heythrop Journal* 51 (2010), pp. 288-97.

[75] Cf. Muers, *Keeping God's Silence*, pp. 192-93.

[76] Cf. Foucault, *Power/Knowledge*; Arrigo, 'Punishment, Freedom, and the Culture of Control,' pp. 473-76; see above, n. 43.

[77] This way of schematising various domains of human flourishing is somewhat influenced by Karl Barth, *Church Dogmatics*, vol 3.4 (ed. G. W Bromiley and T.

exposure or concealment, solitude and domesticity might support such relationships? What forms and operations of power might be supportive of them, or detrimental to them?

Some practical conclusions

To attempt a complete and general answer to those questions would be an extensive task. The allusion to 'particular situations and vocations' also signals that it could have its dangers. Bonhoeffer's insistence on the particular and contextual character of truth-telling should make us wary of giving overly abstract and generalised accounts of knowledge, self-disclosure and privacy.[78] An alternative approach, therefore, would focus on more concrete, specific cases, asking whether the practices of knowledge, self-disclosure and so forth found in them were conducive or detrimental to relationships and social structures that supported the flourishing of those involved. In that spirit, I conclude with the briefest of remarks on the two applications of brain reading on which this article has focused.

1. Neuromarketing: The only neuromarketing approach likely to be currently feasible involves using brain imaging data from volunteers to design marketing interventions intended to influence other people's affective responses. In other words, such interventions are attempts to manipulate consumers' desires, by means that largely evade their conscious control, to induce them to want and buy things that they probably do not need. As argued earlier, the fact that the data informing these interventions come from volunteers does not allay privacy concerns; in Tunick's terms, this activity would seem to threaten the 'decisional privacy' of those targeted by the marketing. In other words, such interventions, if

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F. Torrance, trans. A. T. MacKay et al., Edinburgh: T & T Clark, 1961). The phrase 'Near and distant neighbours' is the section heading of pp. 285-323.

[78] Cf. Bonhoeffer, 'What Does it Mean to Tell the Truth?'

successful, would undermine the agency of those targeted, which in theological perspective would be to the detriment of their flourishing as human creatures.

Moreover, in theological perspective, the goal of such interventions seems to be the *disordering* of desire: to induce a form of *pleonexia* or greed. Christian tradition would see this as detrimental to a person's flourishing in relation to God, since *pleonexia* is associated in Christian thought with idolatry (cf. Col. 3:5). Forms of *pleonexia* that motivate increased consumption of 'stuff' may also be implicated in social injustices (such as the exploitation of the workers who produce the goods) and ecologically damaging uses of natural resources.[79] Presumably one goal of some neuromarketing interventions would be to make consumers less inclined to ask critical questions about such damaging effects.

There are multiple reasons, then, why a Christian theological analysis should take a dim view of neuromarketing. The concerns raised are, at least in part, privacy concerns – specifically, concerns about decisional privacy – but the theological analysis I have outlined sets these concerns in a broader social and ecological context than standard philosophical accounts would. Of course, similar concerns could also be raised to some extent about more conventional marketing practices,[80] even though neuromarketing represents a considerable extension and intensification of what has hitherto been possible. Ethical

[79] A case in point is the increasing concern about 'throwaway fashion': see House of Commons Environmental Audit Committee, *Fixing Fashion: Clothing Consumption and Sustainability* (HC 1952, 19 February 2019), online at https://publications.parliament.uk/pa/cm201719/cmselect/cmenvaud/1952/report-summary.html (accessed 29 November 2019).

[80] A point in effect acknowledged by Wilson et al., 'Neuromarketing and Consumer Free Will,' e.g. p. 389.

reflection on neuromarketing might also draw attention to other practices that should cause similar concerns.

2. Neuroscience-based lie detection in law enforcement and criminal justice: I suggested earlier that the understandings of truth-telling, knowledge and judgement found in accounts of this practice resemble human knowledge *sicut deus* rather than the 'hearing knowledge' and loving justice that would more truly reflect the *imago dei*. This might encourage a suspicious attitude towards the use of brain reading in policing and criminal justice. Yet it could plausibly be responded that it simply reflects the realities of a fallen world: there is real and terrible evil in human societies, and harsh coercive measures are sometimes needed to restrain it. Accordingly, Christians have often been ready to see policing and criminal justice in the way Bonhoeffer understands the 'garments of skins' in Genesis 3: as an aspect of the order provided by God for a fallen world, to restrain its fallenness and preserve its inhabitants. This view has found expression in accounts of 'just policing' by authors from both pacifist and just-war traditions.[81]

Could neuroscience-based lie detection be part of the practice of just policing? Two considerations might give us pause before affirming it too readily. One is the nature of the privacy infringement that it entails. Gaining access to people's

[81] From pacifist and just-war traditions respectively, see Gerald W. Schlabach, 'Just Policing: How War Could Cease to Be a Church-Dividing Issue,' *Journal of Ecumenical Studies* 41.3-4 (2004), pp. 409-30, and Tobias Winright, 'Faith, Justice, and Ferguson: Insights for Religious Educators from a Law Enforcement Officer Turned Theological Ethicist,' *Religious Education* 113.3 (2018), pp. 244-52, DOI: 10.1080/00344087.2018.1450608. However, for a theological critique of 'just policing,' see Nathan Colborne, 'A Peace Crueler than War? Just Policing in a Foucauldian Perspective,' *Mennonite Quarterly Review* 84 (2010), pp. 249-66.

inner thoughts or mental states is not merely a matter of acquiring private information about them, but impinges upon what Ramsay, quoting Robert George, calls their 'interiority,' their 'sense of a personal inner sanctum.'[82] This is not to say that the boundaries of this inner sanctum may never be crossed – Ramsay allows that they may 'in the name of justice'[83] – but it indicates the moral seriousness of such an infringement. It could be said that neuroscience-based lie detection, particularly if people are effectively coerced into undergoing it, is a form of force, albeit not *physical* force. A second consideration, informed by Foucault's account of disciplinary power, is the effect on our moral subjectivity if we knew that agents of the state had the power to look inside our heads and extract information about our thoughts, knowledge and truthfulness, bypassing our own choices about how we communicate our thoughts and knowledge to others. If this were to become a widespread practice, it could over time bring about significant shifts in citizens' moral self-understanding and their relationships to their political communities.

Neither of these considerations amounts to a knock-down argument against the use of neuroscience-based lie detection, by they do indicate its problematic character, and place a burden of justification on those who would include it in the practice of just policing. If we also consider how limited and unreliable the technology is at present, and the grave harm that has resulted from its premature use, there are good reasons to rule it out at least for the present.

Conclusion

Privacy is a central issue in much ethical discussion of brain reading, and I have proposed that it remain so in theological reflection on this topic. Yet I have also

[82] Ramsay, 'Privacy, Privacies and Basic Needs,' p. 290, quoting Robert George, *Making Men Moral* (Oxford: Oxford University Press, 1993), pp. 210–17.

[83] Ramsay, 'Privacy, Privacies and Basic Needs,' p. 290.

argued that in theological perspective, the understanding and practice of privacy must be richer and broader in scope than in standard rights-based accounts, attending to the forms of knowledge and self-disclosure conducive to the flourishing of human creatures in interpersonal and social relationships. In this perspective, it is perfectly possible that some applications of brain reading could be evaluated quite positively. However, the two applications considered in this article attract significant concerns about the character of the knowledge sought, the goals towards which it might be directed and the individual and social effects of such knowledge-seeking.

Brain reading is not alone in challenging privacy, and other technologies may even pose more immediate threats.[84] But given the interest in brain reading and the hopes and aspirations often attached to it, it is certainly worth assessing in the way I have attempted. Indeed, the far-reaching and startling possibilities that it appears to offer may make it a particularly helpful focal lens for a theological re-examination of the ethics of privacy.

[84] As Neil Levy argues: *Neuroethics*, pp. 147-55.